



Dart Hawkesbury
1270 Aberdeen St
Hawkesbury, ON K6A 1K7 Canada
Tel (613) 632-5200
Fax 613 632-5246

Purchasing Receipts

PO No	Supplier	Line Item No	Rel No	Terms	Purchased Item	Description	For Part No	Project	Equipment ID	Order Qty	Due Date	Received Quantity	Accounting Job No	Container No	Status	Receive Date	Price/Unit	Aging Days	Past Due	Total	Supplier Name	
P0041171	ACI001-VC	9	1	Net 30	MT-4140QT-R1.750	AISI 4140 Quenched & Tempered Steel Round Bar 1.750" Dia. : AISI 4140 Q&T Round Bar : MAT'L: AISI 4130 QUENCHED & TEMPERED ROUND BAR AS PER ASTM 4140 QT OR ASTM 4142 QT				12	10/9/2018	12		S118658	Stock	10/12/2018	\$ 27.92 / ft	4		\$335.00	Acier Ouellette Inc.	
										Total:	12		12									\$258.29

Plex 10/16/2018 8:49 AM dart.Tollis.Andrew



Dart Aerospace Ltd.
1270 Aberdeen St
Hawkesbury, ON
K6A 1K7
Canada

Tel (613) 632-5200

PURCHASE ORDER **PO041171**

Supplier: ACI001-VC
Acier Ouellette Inc.
935 Boul. Du Havre
Valleyfield
QC
J6S 5L1 Canada
Phone: 800 667 4248
Fax: 450 377 5696

PO No: PO041171

PO Date: 9/27/18

Due Date: 10/11/18

Purchase Order

Revision:

Revision Date:

Ship-To Contact: Lavoie, Chantal
Phone: clavoie@dartaero.com

E-M SEP 27 2018

Ship To: 1270 Aberdeen Street
Hawkesbury
ON
K6A 1K7 Canada
Phone: 613-632-5200

Via: Ground

Pymt Terms: Net 30

Freight Terms:

Special Comments: QUOTE NO. SOU0134446

Items

Line Item	Job	Part	Supplier Part No	Description	Status	Account	Due Date	Order Quantity	Received Quantity	Balance	Unit Price (CAD)	Extended Price
1		M17-4-R0.375		17-4 SS Round Bar .375" : 17-4 PH / S17400 / TYPE 630 SS ROUND BAR PER AMS 5643/ ASTM A564 GRAIN MUST BE ALONG LENGTH OF BAR MINIMUM YIELD TENSILE STRENGTH = 100 KSI MINIMUM ULTIMATE TENSILE STRENGTH = 150 KSI receive ft	Firmed	-	10/15/18	12 ft	0 ft	12 ft	\$5.1733/ft	\$62.08
2		M303R0.500		303 Round Bar 0.500" : MATERIAL: AISI 303 SS ROUND BAR AS PER ASTM A582 NOTE: 304/316 NOT ACCEPTABLE receive ft	Firmed	-	10/4/18	24 ft ✓ 24.17	0 ft	24 ft	\$2.3408/ft	\$56.18 AT 10/10/18
3		M303R0.750		303 Round Bar 0.750" : MATERIAL: AISI 303 SS ROUND BAR AS PER ASTM A582 NOTE: 304/316 NOT ACCEPTABLE receive ft	Firmed	-	10/4/18	36 ft ✓ 36.25	0 ft	36 ft	\$5.406388/ft	\$194.63 AT 10/10/18
4		M303B1.500X3.500		303 Bar 1.500" X 3.500" : MATERIAL: AISI 303 SS BAR AS PER ASTM A582 NOTE: AISI 304/316 NOT ACCEPTABLE receive ft	Firmed	-	10/15/18	4 ft	0 ft	4 ft	\$328.75/ft	\$1,315.00



Dart Aerospace Ltd.
1270 Aberdeen St
Hawkesbury, ON
K6A 1K7
Canada

Tel (613) 632-5200

PURCHASE ORDER **PO041171**

Items

Line Item	Job	Part	Supplier Part No	Description	Status	Account	Due Date	Order Quantity	Received Quantity	Balance	Unit Price (CAD)	Extended Price
5 AT		M6061T6B1.000X06.000		6061T6 Bar 1.00 X 6.00 : MATERIAL: 6061-T6/T651/T6510/T6511/T62 ALUMINUM BAR PER QQ-A-225/8 OR AMS-QQ-A-225/8 OR AMS 4117/4128/4115/4116 OR QQ-A-200/8 OR AMS-QQ-A-200/8 OR AMS 4160 OR ASTM B211 OR ASTM B221 receive ft	Firmed	-	10/4/18	36 ft	0 ft	36 ft	\$28.1925/ft	\$1,014.93
								36 ft			AT 18/10/04	
6 AT		M6061T6B2.500X01.500		6061-T6 Bar 2.50 X 1.50 : MATERIAL: 6061-T6/T651/T6510/T6511/T62 ALUMINUM BAR PER QQ-A-225/8 OR AMS-QQ-A-225/8 OR AMS 4117/4128/4115/4116 OR QQ-A-200/8 OR AMS-QQ-A-200/8 OR AMS 4160 OR ASTM B211 OR ASTM B221 receive ft	Firmed	-	10/4/18	12 ft	0 ft	12 ft	\$17.1595/ft	\$205.91
								12 ft			AT 18/10/04	
7 AT		M6061T6B2.000X02.000		6061-T6 Bar 2.00 X 2.00 : MATERIAL: 6061-T6/T651/T6510/T6511/T62 ALUMINUM BAR PER QQ-A-225/8 OR AMS-QQ-A-225/8 OR AMS 4117/4128/4115/4116 OR QQ-A-200/8 OR AMS-QQ-A-200/8 OR AMS 4160 OR ASTM B211 OR ASTM B221 receive ft	Firmed	-	10/4/18	12 ft	0 ft	12 ft	\$17.8658/ft	\$214.39
								12 ft			AT 18/10/04	
8 AT		M1018R2.500		M1018R2.500 : MATERIAL: AISI 1018-1025 ROUND BAR M1010S20GA AS PER MIL-S-7097 OR ASTM A108	Firmed	-	10/4/18	10 ft	0 ft	10 ft	\$21.521/ft	\$215.21
								10.5 ft			AT 18/10/04	
9 AT		MT-4140QT-R1.750		AISI 4140 Quenched & Tempered Steel Round Bar 1.750" Dia. : AISI 4140 Q&T Round Bar : MAT'L: AISI 4130 QUENCHED & TEMPERED ROUND BAR AS PER ASTM 4140 QT OR ASTM 4142 QT	Firmed	-	10/15/18	12 ft	0 ft	12 ft	\$27.9166/ft	\$335.00
								12 ft			AT 18/10/16	



Items

Order Notes



https://www.plexonline.com/18efe8b2-5ca5-495e-a0ee-b97bb9dbfe9c/Plexus_Control/Report_Viewr_2.asp?rv=u%1E..%2FPurchasing%2FPO_Print... 3/3



ACIER OUELLETTE INC.

935, Boul. du Havre
Salaberry de Valleyfield (Québec) J6S 5L1
Tél.: 450-377-4248 Mtl: 514-336-4248 Ext.: 800-667-4248
Fax: 450-377-5696 Mtl: 514-336-4246 Ext.: 866-456-4242

DELIVERY - USINE

Copy

CO00112384

Billed to

DART AEROSPACE LTD
1270, ABERDEEN ST.
HAWKESBURY, Ontario, K6A 1K7

Shipped to

1270, ABERDEEN ST.
HAWKESBURY, Ontario, K6A 1K7

ATT: CHANTAL LAVOIE Tél.: 613-632-5200

Instruction F-M

Delivery Route 5

Customer N° CL10001056

Date 2018/09/27

Delivery date 2018/10/09

Your order N° PO041171

Processed by Stephanie Dignard

Salesman

Carrier OUELLETTE VALLEYFIELD

Credit Terme Net 30 Days

Product Description	Weight	Qty	UM	PCS NB			Internal Use Only			
				CMD	EXP	B/O	IN	I	S	C
1 ROUND SS 3/8 17-4PH RANDOM NS RSS-38174PH 9168 1 X 12' R/L AC20148-SM-2018/10/08	4.51	12.00	PI_ \$CLB							
2 PLATE SS 1 1/2 SS303 HRAP NS PSS-112303 11977 1 X 3-1/2" X 48" AC20148-SM-2018/10/08	74.73	1.17	PI2_ \$CLB							
3 ROUND 4140 HEAT TREAT 1 3/4 (R) R4140-134H 4911 HEAT: 75069193 SAW CUT 1 X 12' coffee tube	98.14	12.00	PI_ \$CLB							
	1.00	UN								

MIR : R-109516-6

Total Weight (Lbs) : 177.38

Conditions :

All sold and delivered materials remain the property of "Acier Ouellette Inc." until payment is made in full, complete and cashed. All lost materials are at the buyer's expense. The warranty offered by "Acier Ouellette Inc." is the same as offered and honored by the manufacturer and his warranty is transferred by "Acier Ouellette Inc." to the client. The buyer hereby accepts to respect the following conditions: Net 30 days from billing date and the buyer accepts to pay administration charges of 2% per month (24% per annum) on all past due amounts over 30 days. Any default in respect with this contract will lead to payment by acceleration and permits to the seller, at his choice to claim for the balance due or the repossession of the goods sold. All claims must be made within five (5) days with this document enclosed. Any merchandise that has been damaged, cut or modified cannot be returned. All goods returned must be with our authorization and are subject to a 25% restocking charge.

Prepared By : 30	Verified By :	Delivered By : Time	Date Y M D
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Customer's Signature



GERDAU SPECIAL STEEL NORTH AMERICA
5591 MORRILL ROAD
JACKSON, MICHIGAN 49201

CERTIFIED MATERIAL TEST REPORT

CUSTOMER ORDER NUMBER	CUSTOMER PART NUMBER	TEST NUMBER	WORK ORDER NUMBER	DATE
164576	10902/4140/42MM	75069193	314676 101	10/19/17
210mm Billet				

ORDERED

GRADE	SIZE	LENGTH
4140	1 3/4" RND	24' 2"

CUSTOMER SPECIFICATIONS
SPECIFICATION 10902 REVISION 6, 12/12/13; A304-16; A322-13

CHEMICAL ANALYSIS

C	Mn	P	S	Si	Ni	Cr	Mo	Cu	Sn	Al
0.40	0.86	0.013	0.021	0.24	0.19	0.98	0.16	0.22	0.009	0.020
V	Nb									
0.003	0.003									

GRAIN SIZE SPECIFICATION ASTM E112 FINE GRAIN 5-8

HARDENABILITY SPECIFICATION ASTM A255/A304

THEORETICAL

J1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	18	20	22	24	26	28	30	32	34
56	56	56	56	56	56	55	54	53	51	50	49	48	47	46	45	44	43	43	41	41	39	39	37	

DI CALCULATION SPECIFICATION CAT 1B0024

5.22

REDUCTION RATIO SPECIFICATION ITEM 10902

RATIO= 28.3 TO 1.0

PAGE 1

We certify that these data are correct and in compliance with specified requirements.

Gerdau Monroe
3000 East Front Street
Monroe, MI 48161

Patrick Doyle
Quality Assurance Representative

CONTINUED ON PAGE 2



GERDAU SPECIAL STEEL NORTH AMERICA
5591 MORRILL ROAD
JACKSON, MICHIGAN 49201

CERTIFIED MATERIAL TEST REPORT

CUSTOMER ORDER NUMBER	CUSTOMER PART NUMBER	HEAT NUMBER	MOCK ORDER NUMBER	DATE
164576	10902/4140/42MM	75069193	314676 101	10/19/17

210mm Billet

REF TO

ORDERED

GRADE	SIZE	LENGTH
4140	1 3/4" RND	24' 2"

CUSTOMER SPECIFICATIONS

SPECIFICATION 10902 REVISION 6, 12/12/13; A304-16; A322-13

RESIDUAL MAX SPECIFICATION ITEM 10902

P+S = 0.0340

RESIDUAL MIN SPECIFICATION ITEM 10902

P+S = 0.0340

MELTED/ROLLED @ GERDAU MONROE; MEETS SAE J422 S5/O5 RATING
(WORST FIELD); ASTM E381 MACRO ETCH SATISFACTORY: S1/R1/C1; ASTM A29/A29M-16
** MATERIAL 100% MELTED AND MANUFACTURED IN THE U.S.A. BY THE ELECTRIC
ARC FURNACE AND CONTINUOUS CASTING METHOD. THE PRODUCT HAS NOT
BEEN REPAIRED BY WELDING AND THIS MATERIAL HAS NOT BEEN EXPOSED
TO MERCURY OR TO ANY OTHER METAL ALLOY THAT IS LIQUID AT AMBIENT
TEMPERATURES DURING PROCESSING OR WHILE IN OUR POSSESSION.
GERDAU MONITORS ALL INCOMING SCRAP AND ALL HEATS OF STEEL TO ENSURE THAT
PRODUCTS SHIPPED ARE FREE OF RADIOACTIVE MATERIAL.

PAGE 2 OF 2

We certify that these data are correct and in compliance with specified requirements.

Gerdau Monroe
3000 East Front Street
Monroe, MI 48161


Patrick Doyle
Quality Assurance Representative

4911

R4140-134

50223

14019

(5P)

Eaton Steel Bar Company Inspection Certificate 1701205

EN 10204:2004-3.1

Customer

BOL

Ship Date

Customer PO

Item

11132 rev 004

Customer Item

V123432

Item Description

1-3/4 HR RD 4140/425M 24R 380 Q15F FQ MBT

All bundles listed below were produced using steel from heat 75069193 issued by GERDAU-MONROE and were completed from Eaton Steel Job 826531.

Chemistry	Element	Value	Units
C	Carbon	0.4000	WT%
Mn	Manganese	0.8600	WT%
P	Phosphorus	0.0150	WT%
S	Sulfur	0.0210	WT%
Si	Silicon	0.2400	WT%
Al	Aluminum	0.1900	WT%
Ni	Nickel	0.1600	WT%
Cr	Chromium	0.2200	WT%
Mo	Molybdenum	0.0030	WT%
Al	Aluminum	0.0200	WT%
Cu	Copper	0.0010	WT%
V	Vanadium	0.0010	WT%
Co	Cobalt	0.0010	WT%
N	Nitrogen	0.0010	WT%
P+S	Element Sum Limit	0.0140	WT%
DI	Ideal Diameter	1.2200	IN

Report macro etch results.

DIAMETER

1.7344 - 1.7656

IN

Property	Value	Units
TENSILE STRENGTH	141000	PSI
YIELD STRENGTH	123100	PSI
PERCENT ELONGATION	21.00	IN
PERCENT REDUCTION IN AREA	61.0	WT%
BRINELL SURF	297.0	BHN
TEMPERATURE	500 - 2500	DEGP
AUTANITIC TEMP	1600 - 1700	DEGP
STRESS RELIEF TEMP	500 - 7500	DEGP
MAGNETISM	0 - 70	GAUSS
TIME AT TEMP	Report	MIN
QUENCH MEDIA	Report	MIN
STRESS FREE	CRITICAL	MIN
HT4140-4207	CONFORMS	MIN
MELT IN COUNTRY	USA	MIN
ROLLED IN COUNTRY	USA	MIN
RED RATIO	28.10	MIN
AL91/191H-01	CONFORMS	MIN
AL91-30A-BC	CONFORMS	MIN
PERCENT TM	80 - 100	MIN
STRUCTURE	Report	MIN
Tag Number	3731 LBS	MIN

Heat 75069193

3731 LBS

Bundle tags with Eaton Steel certifies reference the steel grade heat, purchase order number where applicable, part number, product description and quantity. Material produced in accordance with Eaton Steel's Quality Manual QM-0000 Rev 6 dated 11/21/2013.

We hereby certify the above to be in conformance, and a true copy of data represented in company records. This steel was not subject to weld repair or exposed to mercury while in the possession of Eaton Steel.

10221 Capital Avenue, Oak Park, MI 48227 USA

Tel: 248-398-3434

Fax: 248-398-1434

http://www.eatonsteel.com

Heat 75069193



10400 Capital Avenue • Oak Park, Michigan 48237 • (248) 398-3434

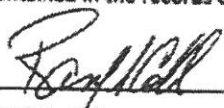
CERTIFICATION OF HEAT TREATMENT

Date: 11 / 14 / 2017
Certification Number: 17 - 0803
Customers Order Number: 826531
Part Number: 10902 - 11132
Heat Number: 75069193
Heat Treat Job Number: 3088

Material: 4140
Quantity: 324 Pcs.
Weight: 64,388 Lbs.
Description: 1.7500" Diameter x 24' 3" Length
Per Specification: ESHT HT4140 - 42QT

	Temperature	Time at Heat	Coolant
Normalized	N/A		
Preheat	N/A		
Austenitized/Hardened	1550 °F	45 Minutes	
Spray Quenched	103.0 °F - 104.9 °F	N/A	Water
Temper	1220 °F	1 Hour 15 Minutes	Air Cooled to Ambient
Temper	N/A		

Method of heat treat monitor, set point thermocouple (Type K). Equipment calibrated per AMS2750E.
We hereby certify the above material has been treated in the manner described are correct as
contained in the records of Apollo Heat Treating and Processing, LLC.



Randy L. Call
Plant Manager
Apollo Heat Treating & Processing, LLC

Lab Services Report



10221 Capital Avenue
Oak Park MI 48237
(248)543-3578 telephone
(248)398-1434 facsimile

Bill To: Apollo Heat Treating and
Processing Company, L.L.C.
10400 Capital Avenue

Ship To: Apollo Heat Treating and
Processing Company, L.L.C.
10400 Capital Avenue
Oak Park, MI

Attn: Randy Call
rcall@apollohtp.com

Report Date: 11/6/2017
Report ID: 17-4353
Request ID:

This report contains results for the indicated services performed on the following sample(s):

Part No	11132	Finish	HR	Shape	Round	PO #	828531
Size	1.750	Grade	4140	Work Order	828531		
Titan Sample ID	Heat	Customer Sample ID					
17-4353-1	75069193	828531 JOB 3088					

Steve Avery

Report Approved By: Steve Avery

Mechanical Testing

ASTM E8M-16a

ASTM E10-17

Sample ID	Ultimate Tensile, psi	0.2% Offset Yield, psi	Elongation - Manual, %	Reduction of Area, %	HBW Surface
17-4353-1	141,000	123,300	21	61	297

Test Comments

Mechanicals tested at Midradius

31 Rc HARDNESS



Certified Member 2007 to 2017
Testing Laboratory

Any services within a section marked with * are not part of Titan Metallurgy's current A2LA accreditation.
All testing performed by Titan Metallurgy was done at ambient (room) temperature.

Report ID: 17-4353

Page 1 of 1

SPECIFICATION CONTROL DRAWING

PURCHASE MATERIAL : AISI 4140 QUENCHED & TEMPERED STEEL ROUND BAR
SPECIFICATION: ASTM 4140 QT or ASTM 4142 QT
PART NUMBER: MT-4140QT-R [D.DDD]
WHERE "D.DDD" = DIAMETER IN INCHES
EG. 5/8" ROUND BAR = MT-4140QT-R0.625

DART AEROSPACE		TITLE AISI 4140 Q&T ROUND BAR	
FORM NO.	MT-4140QT-R	REV	A
DESIGN BY:	VM 08/2017	XX	1
DRAWN BY:	VM 08/2017	XX	1
CHECKED:	VM 08/2017	XX	1
DATE:	08/14/2017	XX	1
APPROVED:	VM 08/14/2017	XX	1
DATE:	08/14/2017	XX	1
COPYRIGHT © 2017 BY DART AEROSPACE LTD.		SHEET 1 OF 1	

ECW 17-655

MATERIAL RECEIPT INSPECTION FORM

MATERIAL: MT-41400-R1.750

PO / BATCH NO.: P0041171/S118658

DATE: 18/10/12

MATERIAL CERT REC'D: Yes

THICKNESS ORDERED: 1.750"

QUANTITY RECEIVED: 124+

THICKNESS RECEIVED: 1.750"

QUANTITY INSPECTED: 124+

SHEET SIZE ORDERED: -

QUANTITY REJECTED: 0

SHEET SIZE RECEIVED: -

DESCRIPTION	NCR (Check Y/N)		COMMENTS
SURFACE DAMAGE	Y	(N)	
CORRECT FINISH	(Y)	N	
CORROSION	Y	(N)	
CORRECT GRAIN DIRECTION	(Y)	N	
CORRECT MATERIAL PER M-DRAWING	(Y)	N	ATM A322
CORRECT THICKNESS	(Y)	N	
PHOTO REQUIRED	Y	(N)	
CORRECT REF # TO LINK CERT	(Y)	N	MT:75069193
CORRECT MATERIAL IDENTIFICATION	(Y)	N	
CORRECT M# ON THE MATERIAL	(Y)	N	
DOES THIS MATERIAL REQUIRE ENGINEERING SIGN OFF	Y	(N)	
DOES THIS REQUIRE AN EXTRUSION REPORT	Y	(N)	

CUT SAMPLE PIECE OF MATERIAL AND PREFORM A HARDNESS CHECK. RECORD RESULTS BELOW					
	HRC	HRB	DUR A	DUR D	WEBSTER
TYPE OF MATERIAL					
SIZE OF TEST SAMPLE					
HARDNESS / DUROMETER READING					

testers located in the Quality Office

QC 18 INSPECTION	ENGINEERING SIGNOFF (if required)
INSPECTED BY: <u>AT</u>	SIGNED OFF BY: <u>mtlee</u>
DATE: <u>18/10/16</u>	DATE: <u>05/16/18</u>

Attach this inspection sheet with the corresponding material cert and remit to be scanned and received in